
3.0 THE AFFECTED ENVIRONMENT

Chapter 1.0 of this EA introduced the proposed project and the various land use plans and regulations that apply to the project. Chapter 2.0 described in detail the Proposed Action and No Action Alternative. This chapter presents a description of the existing environment potentially affected by the alternatives described in Chapter 2.0 and is the baseline upon which Chapter 4.0 analyzes project impacts.

3.1 GENERAL SETTING

Martin's Cove is located approximately 55 miles southwest of Casper, Wyoming, just north of State Highway 220 and the Sweetwater River. Access is via the privately owned Sun Ranch. Signs along State Highway 220 identify the entry road to the area (see front cover). Martin's Cove is a cove in the Sweetwater Rocks, a granitic formation (see front cover). Elevations range from 5,900 ft to 6,500 ft. The land is undeveloped rangeland with sagebrush/grasslands habitat. Junipers occur adjacent to and on the Sweetwater Rocks, and limber pine, Douglas fir, cottonwood, and occasional aspen also occur. The land provides habitat for mule deer, pronghorn, and numerous small mammals and birds that inhabit sagebrush steppe habitat. A trail, constructed under a cooperative agreement between the BLM and the Corporation, extends from the Sun Ranch to Martin's Cove, a distance of about 1.5 miles. Other than some interpretive signs, no development has occurred on the land to be leased and none is contemplated.

3.2 CULTURAL/HISTORICAL RESOURCES

The historic site of Martin's Cove is a sheltered site in the Sweetwater Rocks just north of the Sweetwater River (see Figure 1.1). In October 1856, Captain Edward Martin's 6th Handcart Company--a large group of Mormon converts originating in England who were traveling to the Salt Lake Valley of Utah--took refuge from a winter storm at the site. The Handcart Company had been exposed to winter storms since crossing the North Platte River at Mills, Wyoming, and 145 people died from exposure and starvation between Mills and Salt Lake City. The Martin's Cove historic site is located entirely on public lands administered by the Bureau of Land Management (BLM) and is enrolled as a National Historic Place on the NRHP.

The following is a summary of all the sites documented in the 940-acre lease area, including a determination of eligibility for the NRHP. This summary is based on a Class III cultural resources survey

conducted in 2004 by the University of Wyoming (Eckles et al. 2004), and includes a revisiting of all cultural sites identified in previous surveys, as well as previously undiscovered sites.

1. **Martin's Cove Site (48NA210)** - Historic Period - on the NRHP.

No artifacts, features, or human remains were found that would likely be associated with the historic events of the Martin Handcart Company of 1856.

2. **Tom Sun Ranch (48NA279)** - Historic Period - on the NRHP.

One historic era dump, 48NA3885 (see below), was found within the National Register boundaries of 48NA279 and is most likely related to the Tom Sun Ranch.

3. **48NA307** - Prehistoric Lithic Scatter - Not eligible.

Originally recorded in 1974, this site is described as a thin scatter of flakes. No diagnostic artifacts, features, or fire-cracked rocks were found. Shovel testing revealed no cultural remains and the site likely contains no buried component.

4. **48NA308** - Prehistoric Lithic Scatter - Not eligible.

Originally recorded in 1974, this site is described as an open chipping station. The site has one feature containing three granite fire-cracked rocks and associated charcoal stain. Artifacts included a purple chert sidescraper, a brown chert biface fragment, and a sandstone mano. No diagnostic artifacts were found. No cultural remains were found in three shovel tests, and the site likely contains no buried component.

5. **48NA309** - Prehistoric Lithic Scatter - Eligible.

Originally recorded in 1975, this site is described as an open chipping station. The site contains two lithic concentration areas. A total of 190 flakes and 13 tools were recorded, along with one burned bone fragment. Tools included one corner-notched projectile point reminiscent of Late Archaic Pelican Lake type points. Feature 1 is a concentration of fire-cracked rock; Feature 2 is a rock cairn; Feature 3 is a partial stone circle. Six shovel tests revealed buried cultural deposits to a depth of 60 cm.

6. **48NA310** - Prehistoric Lithic Scatter - Not eligible.

Originally recorded in 1974, this site is described as an open chipping station. Three artifacts were collected in 1974, including a probable Late Archaic side-notched projectile point,

a chert endscraper, and a portion of a chert bifacial tool. The recent survey re-recorded the site as a dispersed lithic scatter with 22 flakes, a brown chert biface fragment, and a brown chert endscraper fragment. A shovel test disclosed a single chert flake in the upper 10 cm of the site, suggesting that the site has no deeply buried cultural deposits.

7. **48NA312** - Prehistoric Lithic Scatter - Eligible.

Originally recorded in 1974, this site was described as a small lithic scatter containing debitage, two biface fragments, a hammerstone, and three groundstone fragments. Beginning in 1997, the BLM has annually point-plotted and collected artifacts from the site, and the recent investigation recovered nine tools, one of which was a probable side-notched Late Archaic point base, and 206 flakes. Due to the large number of artifacts continually being recovered from the site, the site was thoroughly shovel-tested during the recent investigations. Thirty-seven shovel tests were excavated, all to 1 meter below the surface. The shovel tests clearly revealed extensive intact buried cultural deposits.

8. **48NA2516** - Prehistoric Lithic Scatter - Eligible.

Originally noted as part of 48NA312 in 1980, this site was assigned a new site number in 1996. Since 1997, the BLM has point-plotted collected numerous artifacts from the site. These previous studies recorded a hearth and two stone circles. Due to the large amount of artifacts continually being recovered from the site, the site was thoroughly shovel-tested during the recent investigations. Fifty-four shovel tests were excavated, all to 1 meter below the surface. The shovel tests clearly revealed extensive intact buried cultural deposits.

9. **48NA3880** - Prehistoric Lithic Scatter - Not eligible.

Recorded in 2004, this site is described as a dispersed lithic scatter containing a used cobble and 26 flakes. No diagnostic artifacts, features, or fire-cracked rocks were found. Three shovel tests disclosed no buried cultural material.

10. **48NA3881** - Prehistoric Lithic Scatter, Stone Circles and Historic Artifacts - Not eligible under Criterion D.

Recorded in 2004, this site is described as a dispersed lithic scatter with fire-cracked rocks, two stone circles, and one hearth remnant within one of the stone circles. Artifacts consisted of two biface fragments, one used cobble, and 50 flakes. Seven shovel tests disclosed no buried cultural material.

11. **48NA3882** - Historic Axe-cut Trees - Not eligible.

Recorded in 2004, this site consists of five axe-cut juniper and limber pine tree stumps. The axe-hewn trees could date from the mid-nineteenth century during the period of emigrant travel along the Oregon Trail, but also could be attributed to a later date of use associated with the Tom Sun Ranch.

12. **48NA3883** - Prehistoric Lithic Scatter and Historic Axe-cut and Saw-cut Trees - Not eligible.

Recorded in 2004, the site is described as a dispersed lithic scatter and fire-cracked rock scatter. Several axe-cut trees also were recorded. The prehistoric lithic scatter consisted of one biface fragment, one used pebble, and 12 flakes. Two shovel tests revealed two fire-cracked rocks within the top 20 cm but no other buried cultural material.

13. **48NA3884** - Prehistoric Lithic Scatter - Not eligible.

Recorded in 2004, this site is described as a dispersed lithic scatter and one fire-cracked rock concentration. Artifacts consisted of one projectile point reminiscent of a Late Archaic Pelican Lake type point, two biface fragments, one drill, one scraper, one mano, one metate fragment, one used cobble, and 26 flakes. Two shovel tests disclosed no buried cultural material.

14. **48NA3885** - Historic Period Dump Associated with the Tom Sun Ranch - Eligible as Contributory to the National Historic Landmark (NHL).

Recorded in 2004, this is a historic period dump site related to the Tom Sun Ranch. Artifacts include bottle glass, ceramics, automobile parts, wagon parts, machinery parts, agricultural-related machine parts, a cartridge, and a variety of ranch-related household items. The site is recommended as eligible for the NRHP under Criteria A, B, and C for its association with significant events and individuals related to the Tom Sun Ranch (48NA279), which is listed as a NHL. The dump is contributory to the NHL as a landscape element of historic interest because it is associated with the NHL and represents part of the lifeway and operations of the ranch.

15. **49NA3886** - Prehistoric Lithic Scatter and Historic Axe-cut and Saw-cut Trees - Not eligible.

Recorded in 2004, this site is described as a dispersed lithic scatter and axe- and saw-cut trees. The prehistoric component contains two concentrations of flakes with 18 flakes and one tool outside the concentration areas. No diagnostic artifacts, features, or fire-cracked rock were found. The historic component contains 19 axe- and saw-cut junipers and limber

pinus. The axe-hewn trees could date from the mid-nineteenth century during the period of emigrant travel along the Oregon Trail, but also could be attributed to a later date of use associated with the Tom Sun Ranch.

16. **48NA3887** - Prehistoric Lithic Scatter - Not eligible.

Recorded in 2004, this site is described as a dispersed lithic scatter containing 191 flakes, one projectile point, three biface fragments, three flake tools, one mano, one metate fragment, and one historic era three-hole ceramic button. No features or fire-cracked rock were noted. Five shovel tests were excavated, one of which disclosed cultural material--a single flake--within the top 10 cm.

17. **48NA3888** - Prehistoric Lithic Scatter - Not eligible.

Recorded in 2004, this site is described as a dispersed lithic scatter containing one lithic concentration. Three projectile points, three biface fragments, one scraper, one mano, 37 flakes, and one piece of fire-cracked rock were the artifacts recorded. The projectile points appear most similar to Late Archaic points. Four shovel tests were excavated in the site area. With the exception of one burned bone fragment in the top 10 cm, there was no evidence of buried cultural material.

18. **48NA3889** - Prehistoric Lithic Scatter - Not eligible.

Recorded in 2004, this site is described as a dispersed lithic scatter containing one sandstone metate fragment and one non-distinguishable sandstone rock showing light pecking on one end. Two shovel tests disclosed no artifacts, fire-cracked rock, charcoal, or any other indications of buried cultural remains.

19. **48NA3890** - Prehistoric Lithic Scatter and Cairn - Not eligible.

Recorded in 2004, this site is described as a small lithic scatter with fire-cracked rocks and a historic/modern era rock cairn. The site contains one lithic artifact concentration area with another 11 flakes and two granite fire-cracked rocks found within the site outside the lithic concentration. The rock cairn is likely an historic era monument to the Martin's Cove site. It does not appear to be prehistoric given its relatively recent construction, lack of lichen growth on the rocks, and relatively rectangular shape. No diagnostic historic artifacts were found in or near this feature. Two shovel tests disclosed no buried cultural remains within the site area.

20. **48NA3891** - Prehistoric Lithic Scatter - Not eligible.

Recorded in 2004, this site is described as a small lithic scatter containing one projectile point and seven flakes. No features or fire-cracked rocks were found on the surface. One shovel test disclosed no buried cultural material.

21. **48NA3892** - Prehistoric Lithic Scatter - Not eligible.

Recorded in 2004, this site is described as a small lithic scatter containing one retouched flake and nine flakes. One shovel test disclosed no buried cultural material.

22. **48NA3893** - Historic Axe-cut and Saw-cut Trees - Not eligible.

Recorded in 2004, this site consists of 95 axe-cut and nine saw-cut juniper and limber pine trees. The axe-hewn trees could date from the mid-nineteenth century during the period of emigrant travel along the Oregon Trail, but also could be attributed to a later date of use associated with the Tom Sun Ranch.

23. **48NA3894** - Prehistoric Lithic Scatter - Not eligible.

Recorded in 2004, this site is described as a dispersed lithic and fire-cracked rock scatter containing two projectile points, one chopper, one retouched flake, 13 flakes, and four pieces of granite fire-cracked rock. The points are reminiscent of Late Archaic types. Three shovel tests disclosed no buried cultural materials.

24. **48NA3895** - Prehistoric Lithic Scatter - Not eligible.

Recorded in 2004, this site is described as a dispersed lithic and fire-cracked rock scatter containing one hearth feature with fire-cracked rocks and stained sediment inside the area of fire-cracked rocks. This hearth is nearly completely deflated and has insufficient charcoal for a radiocarbon date or macrobotanical analysis. Nine chipped stone tools included one endscraper fragment; two biface fragments; a corner-notched projectile point and a Pelican Lake-like point, both reminiscent of Late Archaic types; one utilized flakes; and two other flakes. Other artifacts included three flakes, one burned bone fragment, and up to 25 pieces of granite fire-cracked rock. Three shovel tests disclosed no buried cultural material.

25. **48NA3896** - Prehistoric Lithic Scatter - Not eligible.

Recorded in 2004, this site is described as a dispersed lithic and fire-cracked rock scatter containing one fire-cracked rock concentration. Artifacts included one corner-notched projectile point possibly dating to the Late Archaic period, one endscraper, 15 flakes, and

20-30 pieces of granite fire-cracked rock. Three shovel tests disclosed no buried cultural material.

26. **48NA3897** - Axe-cut and Saw-cut Trees - Not eligible.

Recorded in 2004, this site consists of four axe-cut and one saw-cut juniper and limber pine trees. The axe-hewn trees could date from the mid-nineteenth century during the period of emigrant travel along the Oregon Trail, but also could be attributed to a later date of use associated with the Tom Sun Ranch.

27. **48NA3898** - Historic Axe-cut and Saw-cut Trees - Not eligible.

Recorded in 2004, this site consists of eight axe-cut and nine saw-cut juniper and limber pine trees. The axe-hewn trees could date from the mid-nineteenth century during the period of emigrant travel along the Oregon Trail, but also could be attributed to a later date of use associated with the Tom Sun Ranch.

28. **48NA3899** - Historic Axe-cut and Saw-cut Trees - Not eligible.

Recorded in 2004, this site consists of 31 axe-cut and saw-cut juniper and limber pine trees. The axe-hewn trees could date from the mid-nineteenth century during the period of emigrant travel along the Oregon Trail, but also could be attributed to a later date of use associated with the Tom Sun Ranch.

29. **48NA3900** - Historic Axe-cut and Saw-cut Trees - Not eligible.

Recorded in 2004, this site consists of 122 axe-cut and saw-cut juniper and limber pine trees. The axe-hewn trees could date from the mid-nineteenth century during the period of emigrant travel along the Oregon Trail, but also could be attributed to a later date of use associated with the Tom Sun Ranch.

3.3 NATIVE AMERICAN RELIGIOUS CONCERNS

In addition to the general scoping process for the EA, formal consultation was initiated with the Northern Arapaho, Crow, Northern Cheyenne, Eastern Shoshone, Shoshone-Bannock, Oglala Sioux, Rosebud Sioux, and Ute tribes through written communication. In July 2004, letters were sent to the tribes requesting assistance in obtaining heritage resource management information for the lease area, and asking them if they would like to consult with BLM further to express any concerns they may have regarding the lease action or if they would like additional information. A response form and stamped return envelope was included to facilitate their reply.

Two tribes, the Northern Arapaho and the Northern Cheyenne, responded by requesting a face-to-face consultation meeting. On September 30, BLM officials met with Northern Arapaho representatives in Ethete, Wyoming. A briefing was provided on the Proposed Action. No adverse issues were raised and there was no expression of concern by the tribal representatives. They did express a desire to visit the area at some point in the future, possibly next spring. On October 6, BLM officials met with representatives of the Northern Cheyenne for an on-site meeting at the Martin's Cove lease area. They indicated that the Devil's Gate site, adjacent to Martin's Cove, was of particular importance to them because it figured prominently in their tribal oral history. They did, however, note that this area was not considered sacred. The group also visited several specific prehistoric cultural sites of interest that had been inventoried within the lease area. It was explained that no development was planned that would adversely affect these sites. The Northern Cheyenne representative were satisfied that the lease action would pose no adverse concerns. Native American consultation is not discussed further in this EA.

3.4 LAND USE AND RECREATION

The approximately 940 acres of BLM-managed land to be leased provides livestock grazing, wildlife habitat, and recreation. The primary recreational opportunity is associated with the Martin's Cove historic site and Devil's Gate. Prior to the Corporation's purchase of the Sun Ranch, there was no easy public access to the Martin's Cove historic site. The Corporation and BLM entered into a cooperative agreement to jointly manage the Martin's Cove historic site after the Corporation purchased the Sun Ranch, and the Corporation allowed public access across their private land to the Martin's Cove historic site as part of the cooperative agreement. The Corporation built a visitors center, a museum, a reconstruction of Seminoe's Trading Post, campgrounds, RV park, and other facilities on the Sun Ranch, and the Corporation opened these facilities to the public at no cost. The Corporation presently allows free access to the Martin's Cove historic site and to the trail to Devil's Gate under a temporary easement to the BLM. To facilitate public use under the cooperative agreement between BLM and the Corporation, BLM funded trail development to the Martin's Cove historic site (Figure 3.1-3.4).

Total visitation to the Sun Ranch facilities from 1999 to 2003 is presented in Table 3.1, as is the number and percentage of visitors who took the trail to Martin's Cove. Seasonal distribution of visitation is presented in Table 3.2. Anticipated visitation in 2004 is approximately 50,000, with an estimated 85% being members of the Church. It is reasonable to expect higher visitation to the Martin's Cove historic site in 2006, during the 150th anniversary of the Martin's Company and Willie's Company disasters. The Church hosts various meetings and seminars at their Sun Ranch facilities and provides handcart treks on the adjacent Oregon-Mormon Trail. However, handcarts are not allowed on the Martin's Cove lease area.



Figure 3.1 Entrance to Martin's Cove, Access to Sun Ranch.



Figure 3.2 Visitors Center on Sun Ranch.



Figure 3.3 Museum on Sun Ranch.



Figure 3.4 Bunkhouse Museum on Sun Ranch.

Table 3.1 Visitation to Martin's Cove Visitors Center and to Martin's Cove Via Trail, 1999-2003.

Year	Visitation		% of Visitors Using Trail
	Visitors Center	Trail to Martin's Cove	
1999	43,680	29,570	68
2000	81,460 ¹	38,560	47
2001	65,240	41,890	64
2002	64,706	30,898	48
2003	50,250	32,509	65
5-year average	61,067	34,685	57

¹ Use of a different counting system in 2000 likely resulted in some double counting.

Table 3.2 Monthly Visitation to Martin's Cove Proper, Assuming Annual Visitation of 34,685.

Month	Total Visitation	% of Total Visitation
January	18	<0.1
February	53	0.2
March	264	0.8
April	599	1.7
May	1,056	3.0
June	9,854	28.4
July	10,558	30.4
August	9,149	26.4
September	1,761	5.1
October	704	2.0
November	423	1.2
December	246	0.7
Total	34,685	100.0

The lease area is currently part of the Devil's Gate grazing allotment. When the trail to the Martin's Cove historic site was constructed, a fence was built to exclude livestock from the lease area to protect the historic site, the trail, and other improvements. The livestock exclusion had the added benefit of improving vegetative conditions dramatically, adding to the natural appearance of the Martin's Cove historic site. Although livestock were excluded from the lease area, a reduction in the Devil's Gate grazing allotment did not occur.

Other recreational uses that may occur near the lease area include hunting, fishing, hiking, and activities associated with the historic trails and associated sites.
